Sixth Grade Earth/Space Science
Grade Standards, Supporting Skills, and Examples

Indicator 1: Analyze the various structures and processes of the Earth system.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Comprehension)	**6.E.1.1. Students are able to describe how the spheres (lithosphere, hydrosphere, atmosphere, and biosphere) of the Earth interact.** • Impact of humans and natural events ✓ Composition of spheres
(Application)	**6.E.1.2. Students are able to examine the role of water on the Earth.** • Surface Examples: waves, glaciers, rivers • Underground Example: aquifers • Atmosphere Examples: precipitation, humidity
(Comprehension)	**6.E.1.3. Students are able to explain processes involved in the formation of the Earth's structure.** **Examples**: plate tectonics, volcanoes, earthquakes ✓ Interpret topographic and digital imagery or remotely sensed data to identify surface features. Examples: local, global, regional ✓ Explain the formation of different rock types and their characteristics. ✓ Use geospatial technologies to investigate natural phenomena. Examples: GPS, GIS, remote sensing

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Knowledge)	**6.E.2.1. Students are able to identify the organization and relative scale of the solar system.** • Sun, Moon, Earth, other planets and their moons, meteors, asteroids, and comets ✓ Origins and age of the universe ✓ Explain the association of time measurement with celestial motions. Examples: time zones, leap years, international dateline

Sixth Grade Earth/Space Science
Performance Descriptors

Advanced	**Sixth grade students performing at the advanced level:** • analyze the role of water as it interacts with the Earth's spheres; • explain the role of plate tectonics in shaping the earth; • compare and contrast terrestrial and gaseous planets.
Proficient	**Sixth grade students performing at the proficient level:** • describe how the spheres (lithosphere, hydrosphere, atmosphere, and biosphere) of the Earth interact; • examine the role of water on the Earth; • explain processes involved in the formation of the Earth's structure; • identify the organization and relative scale of the solar system.
Basic	**Sixth grade students performing at the basic level:** • identify the spheres of Earth; • list two effects of water on Earth; • identify processes of weathering and erosion in the formation of earth's structures; • list the planets in order from the Sun outward.

Sixth Grade Earth/Space Science
ELL Performance Descriptors

Proficient	**Sixth grade ELL students performing at the proficient level:** • identify the spheres of earth; • list two effects of water on earth; • identify processes of weather and erosion in the formation of earth structures; • list the planets in order from the Sun outward; • ask questions related to science topics.
Intermediate	**Sixth grade ELL students performing at the intermediate level:** • label the spheres of earth using a diagram; • list one effect of water on Earth; • identify processes of weathering or erosion in the formation of Earth structures; • name the first four planets in order from the Sun outward; • give simple oral responses to questions on topics presented in class.
Basic	**Sixth grade ELL students performing at the basic level:** • recognize the spheres of Earth; • recognize that water affects the Earth; • identify processes of weathering; • identify the planet they live on; • participate in science activities and experiments with other students; • use correct pronunciation of science words; • respond correctly to yes or no questions on topics presented in class.
Emergent	**Sixth grade ELL students performing at the emergent level:** • use correct pronunciation of science words; • use non-verbal communication to express scientific ideas.
Pre-emergent	**Sixth grade ELL students performing at the pre-emergent level:** • observe and model appropriate cultural and learning behaviors from peers and adults; • listen to and observe comprehensible instruction and communicate understanding non-verbally.

Seventh Grade Earth/Space Science
Grade Standards, Supporting Skills, and Examples

After careful consideration of current research and input from educators throughout the state, the Committee revised former standards to facilitate effective instruction and student mastery. Grade seven standards emphasize Life Science.

Eighth Grade Earth/Space Science
Grade Standards, Supporting Skills, and Examples

Indicator 1: Analyze the various structures and processes of the Earth system.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	**8.E.1.1. Students are able to identify and classify minerals and rocks.** **Examples:** luster, streak, fracture/cleavage, hardness (Mohs Scale), specific gravity, color, magnetism, acid test, flame test, fluorescence • Rocks as sedimentary, igneous, or metamorphic. • Rock Cycle ✓ Law of Conservation of Energy and Matter • Minerals as carbonates (CO3) or Silicates (SiO2) √ Minerals as oxides, sulfides, halides, sulfates
(Analysis)	**8.E.1.2. Students are able to explain the role of plate tectonics in shaping Earth.** • Plates boundaries • Volcanoes • Earthquakes • Seismic waves • Mountains • Convection currents in the mantle • Changes over time Examples: adaptations, extinction, geologic time (relative and absolute), extinct species, fossils, surface features
(Analysis)	**8.E.1.3. Students are able to explain the factors that create weather and the instruments and technologies that assess it.** **Examples**: NOAA, AMS • Differentiate between climate and climate zones. Examples: air masses, fronts, pressure systems, Coriolis effect, wind systems, humidity, storms ✓ Effects of the ocean on weather

	✓ Condensation ✓ Evaporation ✓ Cloud Formation
(Application)	**8.E.1.4. Students are able to examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves.** **Examples**: density, temperature, salinity ✓ El Niño ✓ Ocean zones ✓ Ocean floor features
(Analysis)	**8.E.1.5. Students are able to explain the impact of weathering and erosion on the Earth.** • Soil formation • Deposition (deltas) • Land transformations (Grand Canyon) • Glaciation ✓ Use geospatial technologies to investigate natural phenomena. Examples: GPS, GIS, remote sensing

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Analysis)	**8.E.2.1. Students are able to compare celestial bodies within the solar system using composition, size, and orbital motion.** • Describe the composition of the Sun, the planets, asteroids, and comets. ✓ Use of spectroscopic analysis of celestial bodies ✓ Measurement in space ✓ Constellations ✓ Galaxies ✓ Life cycle of a star ✓ HR Diagram

	✓ Law of Gravitation ✓ Big Bang Theory ✓ Doppler Effect
(Analysis)	**8.E.2.2. Students are able to differentiate the influences of the relative positions of the Earth, Moon, and Sun.** • Lunar and solar eclipses, moon phases, tides, seasons

Eighth Grade Earth/Space Science
Performance Descriptors

Advanced	**Eighth grade students performing at the advanced level:** • use classification methods, identify, and classify unknown minerals and rocks; • give evidence that supports the theory of plate tectonics; • analyze weather maps and make basic predictions; • predict the climate of a coastal region based on ocean currents; • given a scenario, predict the consequences of weathering and/or erosion; • construct a scale model of the solar system; • predict the effects on the Earth's environment if tilt, distance, or atmosphere were changed.
Proficient	**Eighth grade students performing at the proficient level:** • identify and classify minerals and rocks; • explain the role of plate tectonics in shaping Earth; • explain the factors that create weather and the instruments that assess it; • examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves; • explain the impact of weathering and erosion on the earth; • compare celestial bodies within the solar system using composition, size, and orbital motion; • differentiate the influences of the relative positions of the Earth, Moon, and Sun.
Basic	**Eighth grade students performing at the basic level:** • identify rocks as sedimentary, igneous, or metamorphic; • describe activity that occurs along plate boundaries; • define basic weather vocabulary; • list a physical and chemical property of the oceans; • describe the difference between weathering and erosion; • identify the basic objects of the solar system; • describe how the tilt of the Earth is a cause of the seasons.

Eighth Grade Earth/Space Science
ELL Performance Descriptors

Proficient	**Eighth grade ELL students performing at the proficient level:** • identify minerals and rocks according to physical properties; • describe activity that occurs along plate boundaries; • define basic weather vocabulary; • list a physical and chemical property of the oceans; • describe the difference between weathering and erosion; • identify the basic objects of the solar system (planets, comets, asteroids, moons); • describe how the tilt of the Earth is a cause of the seasons; • ask questions related to science topics.
Intermediate	**Eighth grade ELL students performing at the intermediate level:** • identify rocks according to physical properties; • recognize that earthquakes occur along plate boundaries; • use basic weather vocabulary; • list a physical property of the oceans; • recognize differences between weathering and erosion; • name the basic objects of the solar system; • recognize that the Earth tilts on its axis; • give simple oral responses to questions on topics presented in class.
Basic	**Eighth grade ELL students performing at the basic level:** • recognize that physical properties identify rocks; • recognize that the Earth's crust is made up of plates; • know basic weather vocabulary; • know that the ocean has physical properties (big, made of water, plant and animal life); • name one cause of weathering or erosion; • label the Earth, Moon and Sun on a diagram; • recognize that the Earth tilts; • participate in science activities and experiments with other students; • use correct pronunciation of science words; • respond correctly to yes or no questions on topics presented in class.
Emergent	**Eighth grade ELL students performing at the emergent level:** • use correct pronunciation of science words; • use non-verbal communication to express scientific ideas.

Pre-emergent	**Eighth grade ELL students performing at the pre-emergent level:** • observe and model appropriate cultural and learning behaviors from peers and adults; • listen to and observe comprehensible instruction and communicate understanding non-verbally.